

VIRGINIA WILDLIFE

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Game Commission Photo by Kesteloo

The gray squirrel . . . Virginia's commonest squirrel.

VIRGINIA WILDLIFE

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COMMONWEALTH OF VIRGINIA



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Cover

To the bird hunter, possibly no sound is as exciting as the whir of wings of a rising covey of bobwhite quail. Ed. Bierly's beautiful painting portrays the excitement of the moment.

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HARMONY OR DISCORD?

A Critical Look at Wildlife Management

By R. Y. Edwards and C. D. Fowle*

MOST wildlifers are too involved with pheasants, deer, and other large animals to have much time for *Sorex*. Yet *Sorex*, one of our smallest mammals, is an example for wildlifers to ponder. *Sorex* is a dynamo, a go-getter, a creature with a goal before him and he devotes most of his life to that goal. He has been going so long he has become wedge-shaped, with a "forward look," and rushes nearsighted after his objective, oblivious to where he is, where he is going, and why he is going at all.

We wonder if most wildlifers are like *Sorex*. Are we each following our own noses, each narrowly specialized, each seeking a somewhat different goal, and most of us oblivious to where we fit into the scheme of things? If this is only partly true, are we getting the most from our efforts if they are only partly unified and we are not fully aware where we fit into the mosaic of human affairs? Perhaps it would pay to slow down, raise our noses from the narrow path, and take a look at the world about us.

Wildlife management is emerging from an era that put all its faith in laws, regulations, predator control, and game farms. In this period it was a narrow, specialized activity. Laws and regulations purported to govern the size of the harvest and the behavior of harvesters, yet tended to ignore the factors controlling the production of the crop. Stock from game farms was set out wherever public demand required it or where superficial observation suggested it would live long enough to provide targets. Predator control was based on a simple mathematical approach that ignored the effects of time, reproduction, and the skill of the controller, all essential to any accurate formula.

The new look for wildlife management has brought with it the clear recognition that over large areas wildlife production is not controlled by wildlife technicians, administrators and legislators, but by foresters, farmers, city planners, engineers, and others who make use of the land from which wildlife is generally produced as a by-product. There are, of course, some areas where wildlife is an element of the unaltered wilderness, but even here, production and species composition fluctuate willy-nilly with advancing plant succession, weather, and the natural degeneration of climax vegetation.

The forester, the farmer, and the engineer have their tools and are using them to make visible and frequently vast alterations to the land in achieving their ends. The harvest of a predetermined volume of pulpwood or saw logs by means of powerful, mechanical equipment from an area on which production has been closely estimated can, in a short time, erase a wildlife crop and clear the way for a new one. The engineer with his relatively precise procedures can, through the judicious location of a dam, wipe out, greatly modify, or create a productive waterfowl and muskrat marsh. The farmer, more mechanized every year, soon sees economy in large fields, free of fences, where mechanical equipment can be used

(Continued on page 10)



Game Commission Photo by Shomon

Rail hunting can be great sport. The clapper rail is heavily gunned during the open hunting season, the birds being forced from cover by high tides.

DON'T PASS UP THE MUD HEN

Several species of rails offer early marsh shooting and a delectable meal for Virginia sportsmen

PICTURE, if you will, a large marsh bird family with 180 separate species and about 50 genera and you have some idea of the size of the rail family, scientifically known as the *Rallidae*. In this big family of chicken-like birds we find three distinct classes of marsh birds, the rails, gallinules and coots. Nearly all these birds are commonly referred to as "mud hens" although countless other types of names are less frequently heaped upon the tribe.

The distribution of the rail family is virtually cosmopolitan with about 15 species occurring in North America. In Virginia four rails are listed in the check list of birds occurring most commonly in the Commonwealth. The coot is very common in the state and is particularly prevalent in the tidal estuaries. Space, however, does not permit its special treatment here. As for the gallinule, this related bird belongs to that tribe of mud hens most commonly found in the Gulf States. So, for purposes of brevity and space, we will consider only the four more common Virginia rails—sora, clapper rail, king rail, and Virginia rail.

Rails are secretive, shy marsh birds, with long, well-developed legs and short, rounded wings. Their presence is revealed by their calls, and they are seldom seen except when flushed from the marsh. They will run and hide rather than take wing. When forced to fly their flight is short, with legs dangling, and they quickly drop back into the protective marsh. The flesh of these birds is delicious, and they are eagerly sought during the hunting season by Virginia sportsmen.

Sora

Unlike the other rails found in Virginia, the sora does not nest with us and is only seen during the spring and fall migrations. It is a small grayish brown bird, with a black patch on its face and throat, and possesses a short yellow bill. It breeds from Maryland north in the freshwater marshes and winters from Florida south.

During the migration and the brief time spent with us, these rails may be flushed in our brackish marshes, but they prefer the wild rice (wild oats) area of our freshwater marshes. They are especially esteemed for



North Carolina Wildlife Resources Commission Photo by Jack Dermid
A clapper rail nest showing typical construction and the characteristic brownish-white splotched eggs.



North Carolina Wildlife Resources Commission Photo by Jack Dermid
These young clapper rails are just emerging from the egg. All are hatched within a few hours.



North Carolina Wildlife Resources Commission Photo by Jack Dermid
The mother clapper rail and her brood. The young are glossy black and a brood will have from 8 to 12 birds.

their fine flavor and, as in the case of the other rails, are easy targets. The sora arrives here during mid-September and stays until cold weather. The first freeze sends them on south. They may be seen swimming from one piece of cover to another on storm tides and are expert divers. In the spring they return north and pass through Virginia during April.

Their presence in our marshes is revealed by a sharp "keek" uttered when disturbed by the crack of an oar on the surface of the water. They can be easily flushed only from protecting marshes at extreme high tides. Hundreds are killed yearly by our nimrods. Were it not for its high reproductive rate and certain inaccessible refuge areas, it would have a difficult time surviving. It is one of our most sought-after migrants but seems to be able to maintain its numbers from year to year.

Clapper Rail

Virginia's two Eastern Shore counties, Northampton and Accomack, have an inhabitant of their saltwater marshes known locally as the marsh hen, meadow hen, sage hen, rail and clapper rail. A few are also found on the brackish marshes on the western shore of Chesapeake Bay. They are odd-looking birds with long legs, a long bill and an olive-gray color, which blends with their marsh habitat. Both the common name *clapper* and the specific *crepitans*, which is Latin for clattering, were given to this bird for its noisy call, which has been described as a clattering *cac-cac-cac-cac*. This call is quite familiar to persons who frequent the marsh where the call is taken up and repeated by hundreds of birds throughout the area.

The clapper rail is a large, chicken-like bird, weighing from 12 to 15 ounces and is surprisingly secretive for its size. Its home is among the grasses and reeds of the salt marshes, where it is seldom seen except at extremely high tides, at which time it will take wing at the approach of a boat, fly a short distance, then drop back into the marsh. Its long toes, legs, and slender body permit it to dart among the reeds and hide with ease.

The clapper rail breeds from Connecticut south to North Carolina and a few winter with us in Virginia, but most of them winter further to the south and return to Virginia about the first of April. The nests are composed of grasses found in the marsh and the clutch consists of from 8-12 brownish-white eggs, speckled with brown. The young are glossy black, which soon gives way to the olive gray of the old birds. The most serious natural enemy of the birds is the high storm tides of the spring and summer, which destroy their nests and drown the young before they are able to care for themselves. Were it not for the renesting habit of this bird and its high productive rate, its numbers would be dangerously reduced during these floods.

This bird is heavily gunned for during the open season but, fortunately, can be forced from its cover only during extremely high tides and these occur only a few times during the open season.

King Rail

The king rail closely resembles the clapper but is

slightly larger and is reddish brown instead of olive gray. Its favorite habitat includes our brackish and fresh-water areas, but the range of the clapper and the king sometimes overlaps in the marshes at the extreme tip of our Bay counties. This bird is occasionally bagged by sora hunters who call him the "king sora."

The king rail nests in the marshes of our tidewater country, where his deep throaty call may be heard throughout the summer. His nest resembles the clapper's, possessing a similar number of eggs, which are more heavily spotted with brown than the preceding species.

The king rail does not occur in such large numbers as the clapper but is scattered more uniformly throughout our marshes. Any large dark rail, the size of a frying chicken, seen crossing the highway or flushed from our marshes may be safely classed as the king rail.

Virginia Rail

The Virginia rail is similar in size and in habits to the sora, except that it is far less common and appears to be more solitary in habits.

The eggs of the Virginia rail are distinct and characteristic, being yellowish white while the sora's eggs are more a buff although about the same size. The Virginia rail can also be told from the sora by its longer bill and reddish plumage.

The waters of Back Bay and its tributaries and also inland brackish marshes appear to be its favorite haunts in Virginia. During mild winters a few birds stay in the state all winter long but the majority migrate further south in October and November, arriving again in our eastern marshes in the spring.

The method commonly used for hunting the rail involves two men, a boat and a long pole. When tide conditions become favorable—a high tide pushed by strong inshore winds—the marshes are flooded, leaving only an occasional area of suitable rail cover. Birds are easily flushed from these little "islands" of marsh grasses.

In using the two-man system for hunting, one person either sits or stands in the bow of the boat while the other man poles or paddles the boat through the flooded marsh. As the boat progresses through the marsh grass, the rails become excited and flush from the protective vegetation. It is at this moment an alert hunter can score a clean wing shot.

From the conservation point of view, it should be emphasized that a close working dog is a great help in retrieving cripples. In dense marsh vegetation a downed rail often is difficult to locate. The dog also is a great aid in helping to flush the birds if he stays near the boat in shallow water.

The rail, a rather easy target on windless days, offers some important advantages to the hunter. An early season gives the hunter a chance to get in the field when most types of hunting are well in the future.

The success of a rail hunt may vary from a full bag limit in a short time to a few birds after a full day in the marshes. One point is always apparent regardless of your success: you will have plenty of exercise and a goodly amount of fresh air.



Game Commission Photo

The clapper rail is commonly known to hunters as the saltwater marsh or mud hen. The flesh of these birds makes a delectable meal.



North Carolina Wildlife Resources Commission Photo by Jack Dermid

The clapper rail is a large, chicken-like bird, weighing from 12 to 15 ounces, and is surprisingly secretive for its size.



You May Be Surprised—Fishin'

By MARSHALL MORGAN*

It's the unexpected things that happen—the surprises that occur on a fishing trip—that seem to linger in one's memory. One in particular grew out of Nancy's inquiry:

"When are you going to take me down on the Occoquan to catch some crappie? You been promising me a long time."

"I know," I countered, "but the water has been muddy and it's been hot, and you know crappie won't bite good when things are like that."

"Yes, but things are not that way now. It's late October now. The river is clear and low and it's nice and cool. We could catch some now."

There wasn't any way to duck that one. It was October in Virginia. The time of the year I liked to fish. My grandfather had always said October was the finest month in the year for fishing. "The air is cool, the mosquitoes and the flies are gone. Your minnows will live and your fish will keep," the old gentleman would sagely observe, and through the course of the years I learned that he was right.

Taking a couple of rods and reels, our tackle box, minnow bucket, and a picnic lunch we piled into the old car and headed for the widow's place at the lower bridge where we were to get our minnows. A path wound around the foot of the hill to the spring. Here was an old moss-covered tub. A bold clear stream from a limestone bluff poured into the tub through a rusty iron pipe.

"Open your bucket," said the widow as she ran a fine mesh net deep into the tub. "What kind of minnows you want?"

"Little ones. About an inch-and-a-half to two inches long. We are going crappie fishing."

In no time at all we had all the bait we needed. Selecting a light but sturdy boat and a good pair of oars we shoved off for the trip up the river.

"They been catchin' some good ones over there under the bridge," was the widow's parting and friendly direction. We anchored under the bridge close by a stone pier, rigged up our lines, baiting each hook with a lively minnow and began fishing. Nancy wanted a cork. I fished on bottom. Soon her cork began to bob up and down and circle. Then it disappeared.

"Jerk him," I said. She did. Out came the cork and line and a crappie, which latter shot over our heads and splashed into the river behind us.

"You oughn't jerk 'em like that," I warned her. "Crappies have a tender mouth and they tear loose. You want to kinder tighten up against them—gentle like—when you can feel them pull."

"You told me to jerk him and I jerked him," Nancy shot back at me.

"Yes," I admitted, "I guess 'jerk' wasn't the right word."

Just then I got a bite. My line tightened. The tip of my slender rod bent. This felt like a good one. I reared back with the rod. Out came another crappie which fell off the hook a few feet above the water.

"I ain't the only one in this boat that jerks crappies," observed Nancy icily.

"Things ain't workin' right here," I admitted. "Let's go on up to the real crappie hole. Not very far. Some

*Well known sportsman and writer from Arlington, Virginia.

big ones up there. The tide's comin' in and it will be easy rowing."

I wanted to get on up the river anyway. It was October, as Nancy said. October my grandfather had loved and talked about. The woods on either side of the river were a riot of autumn color. The soft glow of a late October sun pierced the whispering leaves with its golden darts. The gums and oaks were putting on their woodland dress of dark red. The dogwood flashed brilliant red like the breast of a scarlet tanager. The poplars, not to be outdone, were arrayed in brilliant yellow, and the hickories were resplendent in flaming gold. Mingling with this pageant of forest color was the green of the pines, and of the oaks that had not turned. Dame Nature had invited them all to appear in full dress and display their charms before Old Man Winter touched each one with blighting brush and watched them fade and fall.

I started rowing, reveling in the beauty and majesty of God's handiwork as we glided up the river.

"Just look at the hickory over there," I exclaimed.

"Look at the river, and look where you're rowing," was Nancy's response. "You're heading into that snag there."

I straightened the boat and leaned on the oars again.

"Captain John Smith used to fish these waters, they say."

"How long has that been and what did he catch?" queried Nancy. Hoping to strike the right key after awhile I ventured:

"Over here just a little ways there was a big massacre of colonial settlers by the Dogue Indians, back before George Washington's time."

"You're massacreing a lot of good fishin' time," Nancy shot back. "Are you goin' to row or just rave? You're headin' into a lot of weeds now."

Convinced by now that Nancy was merely a realist, uninterested in the romance of history or the beauties of nature, but interested only in crappies, I got down to rowing again.

"We're about there now," I announced. "Right over here is the real crappie hole I've been tellin' you about. See where that dead tree has fallen into the river? Well, crappie like to hide under branches and limbs of trees and brush and in the shadow of logs and tree trunks. We'll ease in right quiet like and drop the anchor just outside the old tree."

Quietly we made fast a little above and just outside the spot where we knew the outer branches of the dead tree lay.

"It's deep here and they'll be hidin' down near the bottom," I explained. "You'll have to take your cork off your line."

Baiting up with a fresh minnow each, small sinker on the bottom of the line, we let down until each sinker just touched the bottom and then raised it a little. Things began to happen right away. The tip of Nancy's slender steel rod quivered and the line straightened out.

"I feel him," she whispered. "I'm gonna pull him."

This time she reeled in a flashing beauty, a silver-white, black-speckled prize that must have weighed a pound.

"I see what you mean now," observed Nancy, softening up perceptibly. The first one went on the string and was eased into the river. Another took Nancy's fresh minnow and with perfected technique she had it flopping in the bottom of the boat in no time. Much interested she watched one take my minnow and pull the rod tip down. I would give him plenty of time. The line straightened. I felt the weight of a good fish. I tightened up. He was on and was tearing about down there, fighting hard. Then my line stuck and I couldn't feel him any more. I was snagged. He had run around a limb and was gone. I was licked.

"Tightenin' up on 'em too long is bad as jerkin' too hard, ain't it?" came the pointed query from the other end of the boat. No answer. Watching the snag more carefully we had better luck. There was a school of fine crappie in that hole, hiding under the submerged tree. Our string began to grow. In a little while we had eight handsome crappie, plump and thick shouldered.

To digress a moment, I'll admit Nancy can beat me cleaning fish. So I let her clean 'em. With a short-bladed knife sharp as a razor, that deft left hand of hers has a fish scaled, cleaned and ready for the skillet in no time flat.

"I can fix 'em all while you're foolin' with one," says Nancy, and submissively I let it ride at that. Anyway I knew those crappie would be rolled in corn meal and salt and fried to a golden brown, a dish fit for any gourmand, and that there would be old fashioned corn meal hoe-cake, brown on each side, split and buttered while hot, and potato salad and sliced tomatoes, and fried corn if there was any corn left in the market, and black coffee—and peach preserves to top it off with!

"We've caught enough of these," I said presently. "Let's go up to the upper bridge. There's a big flat rock just above it. We can anchor over that rock. The water goes off deep all around it. We might pick up a bass or two there. Good place for an old bronze-back to lay up and hide and pounce out on some unsuspecting minnow. Guess these small hooks will be all right but we'll put on two of the largest minnows."

I baited Nancy's hook and she cast out a little above and to the left of the flat rock. I busied myself baiting my rod to follow suit. Nancy was in a good spot, it seemed. She was using a limber steel casting rod, 4½-foot



tip, light silk casting line and a small Carlisle hook. The line was on a German silver Meek Kentucky reel that had once belonged to my grandfather. Sixty years old or more, it still ran like a watch. Glancing up I noticed that Nancy was standing in the end of the boat. She seemed to be struggling and was evidently in trouble. I hurried to her side.

"Here, honey, take it. Something has got me," she said. Gone was her tone of wifely badinage. I took the rod.

"Feels like you're snagged," I announced with decision.

"It won't move." Then suddenly the tip quivered violently, the line went out and it felt like it was tied to a bull calf in a stablelot. Getting in the extreme rear end of the boat I held on. The heavy fish, deep down, circled from side to side, repeatedly going under the boat. Each time I passed the rod under the end of the boat to meet this maneuver. The fish was heavy. I knew the rod would stand the strain but I feared for that light line and that the small hook might pull out. This tug of piscatorial war lasted for quite some time. I was getting tired. Presently I managed to gain a little line. He was coming up! I kept reeling, cautiously. Suddenly, a great gray looking fish broke the surface, casting spray in every direction, and rolled over. Looked big as a

shoat! And I was really scared now. With a shortened line I managed to keep him up, but he continued to fight, still circling around the end of the boat and rolling over from time to time. Then it happened. The reel came off the seat and with a sickening clatter rolled into the bottom of the boat. Pressing the line tight against the rod with my right hand I caught the line above—flyrod fashion—with my left hand and gave him the full spring of the rod. The rapier-like steel responded nobly. The big fish was tiring, but still fighting, rolling and boring down. I stripped in a little line at a time with my left hand and caught it with my right. Repeating this operation I managed to shorten the line. Now the fish was close to the side of the boat. I planned to roll him in if I could. Leaning heavily against the side of the boat I brought the gunwale almost level with the surface of the river. Still holding the light line and rod tight in my right hand, I caught the big fish in the gills with my left and dragged him over the side of the boat. At this moment the small hook pulled out of the fish's mouth! I fell back into the bottom of the boat with a whale of a fish on top of me, exhausted, dazed, but happy!

On both sides of the river people had stopped fishing to watch the battle. My cap was floating in the river. Using Nancy's little rod, a crappie hook and a crappie minnow, we had landed a 20-pound channel cat!

HARMONY OR DISCORD (Continued from page 4)

with greatest efficiency. What will be his choice as a producer of hybrid corn or soybeans in considering removal of weeds and shrubs at the roadside to make way for a few more rows of crop? Will dollars be more attractive than a brood of pheasants or quail, a few cottontails or a catbird's song? His choice is simple if he is not a hunter or a naturalist. A few passes with his machine, and he has his additional crop area. On the other hand, the farmer, while unknowingly destroying the original crop of deer and wild turkey, may create an environment for cottontails, pheasants, Hungarian partridge, European hare, and starlings. Continually modifying the land and its vegetation, he is a prime influence upon the quality and compositions of wildlife populations.

Where is the wildlife manager in this picture and what tools has he brought with him? It seems that he arrived on the scene almost empty handed. He divided his time among inventory, reconnaissance, research, and a search for tools, or fell back on the outdated tools when emergency demanded visible action. His dilemma lies in the fact that rarely does he manage the land on which his crop is produced. Usually his problem is to find ways of integrating wildlife management with other land-use practices, and in his search he is inevitably brought into contact with others using the land.

Within the so-called conservation movement we hear much of wise land use, but the cooperation between users so necessary to the determination of what constitutes wise use is not so evident. Who is to say which is the sounder use, to harvest the standing timber from

an area, preserve it in a recreational park, or leave it inviolate to protect a city's water supply? What economic or ethical compensation can be paid the farmer to encourage him to leave an uncropped strip at the field border next to his fence? To what degree are forest and wildlife management compatible upon the same piece of land? Today a good deal of single-purpose utilization is seen on the land. Excessive urbanization and industrial development at the expense of parks and recreational areas, and harvest of wood products without reference to sound silvicultural principles, water control and recreation, are several of many possible examples.

Rarely is our field allowed to be single purpose. Wildlife management must usually carry on in a multiple-use program in which the tools of other land users are used to gain its ends. Bulldozers, power saws, draglines, dams and other water-control structures, as well as ploughs and seeders, may be employed for a multiple purpose on the same piece of land. The judicious use of a bulldozer building an access road may, within a few minutes, create clearings for broods of grouse. A pond strategically located to water stock may support a few ducks, muskrats, and other wildlife, provide a pleasant recreation ground and possibly a supply of pan fish as well as water for fire control. A little planning in a reforestation project on abandoned farms may lead to better wildlife habitat with little or no alteration in the forester's objectives. A row or two of corn left at the field border may be the key to a covey of quail, or a share of pheasant hunting

(Continued on page 22)

Virginia Scouts Active at National Jamboree

There were eight boy scout councils representing Virginia at the fourth National Jamboree of the Boy Scouts of America. These 1725 boys from the Old Dominion were exultant over their week of fabulous experiences which they shared with 55,000 other boy scouts on the 3,000-acre Valley Forge Park in Pennsylvania. Attending the camp programs, too, were 22,000 daily spectators.

Featured this year were field sports, camp fires and a "conservation circus." The latter is of particular interest as it was sponsored and produced by the Fish and Wildlife Service of the Department of the Interior, the Department of Agriculture, and several forestry and wildlife agencies. This was the second Jamboree in which conservation played a major role.

The "circus" had three tents—one featuring soil and water conservation, one for the forestry group, and one to feature wildlife. Tent entrances were decorated with a carnival motif around the central theme "Our Magic Land." Each group of scouts was shown the world premiere of a color film, produced by the sponsors, and

given a copy of a booklet, "Conservation Magic for Scouts," prepared by national conservationists and published by the National Wildlife Federation and the Outboard Boating Club of America.

One of the most amusing entertainers at the Jamboree was Smokey, the forest fire prevention bear who prowled about the Valley Forge area throughout the entire week. At one time he had as many as thirty-four cameras focused on him. Since he was in constant demand, Smokey covered a lot of territory in a jeep and delivered his all-important forest-fire prevention message in his distribution of Smokey pins and buttons. In return he received gifts from all over the country—among them tobacco leaves from Virginia and horned toads from Texas.

Conservation education of the scouts included causes of wind and water erosion; how misuse of land causes floods and siltation; how to handle forest fire fighting equipment; identification of forest insects and the damage they do to trees; knowledge of how wildlife habitat could be improved by providing food, water and cover.



Some 1725 Virginia boy scouts shared in the week of fabulous experiences at this year's National Jamboree at Valley Forge, Pennsylvania.



One of the most amusing entertainers at the jamboree was Smokey, the U. S. Forest Service's fire prevention bear. He prowled the area for the entire week.



This was the second jamboree in which conservation played a major role. The "conservation circus" was a popular feature.



Conservation education included the study of ways to prevent wind and water erosion, forest fire prevention, the importance of food, water and cover to wildlife, and other conservation measures.

Migratory Game Bird Regulations

in Virginia
1957-1958



WATERFOWL (DUCKS, GEESE, BRANT, COOTS)

- Season:** November 7 - January 15
Hours: From one-half hour before sunrise until sunset; except, however, at Back Bay no hunter shall be permitted to leave shore before one-half hour before sunrise, and shall not be allowed to fire his gun before sunrise, and shall not shoot later than 4 p.m.
Bag Limits: Ducks, 4 a day (1 of which may be a wood duck), 8 in possession after first day (2 of which may be wood ducks)
Geese, 2 Canada geese a day, 4 in possession after first day
Coot, 10 a day, 10 in possession
Brant, 6 a day, 6 in possession

RAILS AND GALLINULES

- CLAPPER RAIL AND GALLINULES**
Season: September 16 - October 31
Bag Limit: 15 a day in the aggregate of rails and gallinules, 30 in possession
Hours: From one-half hour before sunrise until sunset each day

SORA

- Season:** September 16 - October 31
Bag Limit: 25 a day, 25 in possession
Hours: From one-half hour before sunrise until sunset each day

DOVES

- Season:** September 16 - November 14
Bag Limit: 10 a day, 10 in possession
Hours: From 12 o'clock noon until sunset each day

WOODCOCK

- Season:** November 18 - December 27
Bag Limit: 4 a day, 8 in possession after first day
Hours: One-half hour before sunrise to sunset each day

JACKSNIPE

(WILSON'S SNIPE)

- Season:** November 19 - December 18
Bag Limit: 8 a day, 8 in possession
Hours: One-half hour before sunrise to sunset each day

Learn to Recognize Your Waterfowl

In Virginia it is necessary to be able to identify some species of waterfowl in order not to break the migratory game bird regulations. The Virginia Commission of Game and Inland Fisheries has a Virginia Waterfowl Identification Guide free for the asking. This 56-page booklet, published by the Atlantic Waterfowl Council, makes identification an easier task.

VIRGINIA WILDLIFE CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

SOUTHEASTERN CONFERENCE OF COMMISSIONERS IN ALABAMA. The eleventh annual conference of the Southeastern Association of Game Commissioners will be held in historic Mobile, Alabama, October 21-23, 1957. The Virginia Game Commission will be well represented. Among the members of the staff who will attend and who will present papers are Joe Shomon, chief of the education division and editor of Virginia Wildlife, and Bob Martin, assistant chief of the fish division. Executive director I. T. Quinn will feel at home in the Alabama city since he was formerly head of the game department in that state for 17 years.

GAME COMMISSION CONVICTIONS IN 1956. Webb Midyette, chief of the law enforcement division, disclosed that during the fiscal year beginning July 1956 through June 1957, there have been 8,468 dog, game and fish law convictions. Total proceeds, including costs and fines from these convictions were \$106,785.03. The monies from the fines, which amounted to \$70,462.25, were given to the state literary fund for school operations in the state; and the remaining portion \$36,322.78 which represented costs was paid to the local courts. It was also reported that during the year 1956, the game wardens disposed of 46,246 prowling, stray and depredatory unlicensed dogs. Midyette emphasized that the Commission of Game and Inland Fisheries is self-supporting from the hunting and fishing licenses with fifteen percent in addition from the sale of dog licenses.

FISH BIOLOGIST JOINS COMMISSION STAFF. John R. Sheridan, native of New York state, has left his work in North Carolina with Information Education to become a member of the fish division of the Commission of Game and Inland Fisheries. He has a degree in fish management and obtained his masters in science at Auburn University in Alabama. Sheridan will work in northern Virginia and be located at Culpeper.

HIGH POPULATION OF DUCKS TO MIGRATE SOUTH. Although there is no increase in last year's picture, the ducks assembling in Manitoba, Alberta and Saskatchewan are plentiful. Compared with last year's number of ducks and geese, there is some slight reduction, probably due to delayed rainfall, so reports The Duckological of Ducks Unlimited out of Canada. The aerial survey was made a little ahead of schedule this year and it may have preceded the peak of concentration in population by several days. Late rainfall in all three provinces succeeded in restoring water levels of many depleted water bodies, but has done little to revive those which had become dry.

ORDINANCE AGAINST BEING A LITTERBUG. Residents of Hanover Township in Beaver County, Pennsylvania, have proclaimed their first ordinance . . . which is against littering. Ordinance No. 1 forbids dumping of trash inside the township's borders and provides a \$100 fine against offenders. So that the law can be effectively enforced, residents are also encouraged to report license numbers of motorists seen throwing trash from their cars.

YOU MAY SHOOT A DYED DOVE. The Missouri Conservation Commission wishing to know the movements of doves this summer tried an experiment on 128 mourning doves and dyed them blue, green, yellow and red. The study is being carried on by the University of Missouri Cooperative Wildlife Research Unit, in cooperation with the Conservation Commission, to determine the ability of the dove to "home" to the same breeding area from year to year. Anyone seeing a color-marked dove is asked to report to the Conservation Commission the date, time and place the bird was seen.

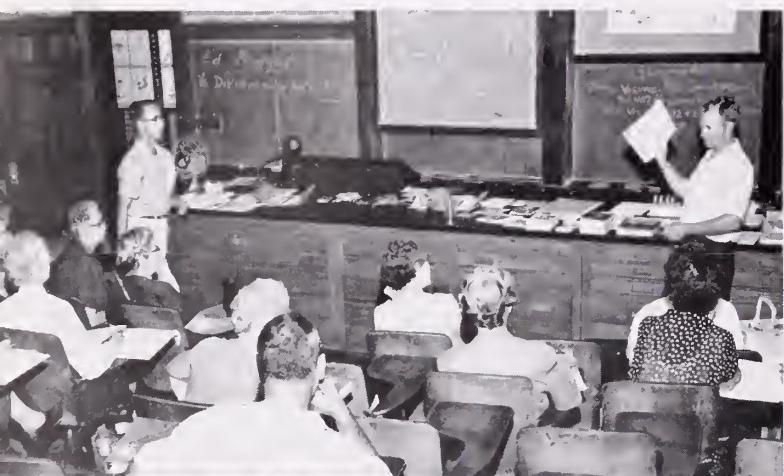
SOIL CONSERVATION SOCIETY OF AMERICA CONFERENCE. In Monterey, California, an alarming report was issued, at the annual meeting of the Soil Conservation Society of America, which was that time is not far distant when scarcity of water will be the most critical of all natural resources in the nation. Nolen J. Fuqua, President of National Association of Soil Conservation Districts, said that water was needed today for expanding agriculture, industry and urban needs and recreational purposes. Howard Orville of the Advisory Committee on Weather Control stated that 200,000,000 gallons of water are needed to sustain present economy of the U.S.A. per day.



Mr. Ed Mundie, director of the William and Mary workshop, registers the teachers and gives them preliminary instructions regarding the course.



A representative of the education department of William and Mary addresses the student teachers and welcomes them to the campus.



Ed Rodger and Carl Holcomb (top photo) impress upon the teachers the importance and value of Virginia's forest resource. During the wildlife session (bottom photo) the teachers received a surprise when the classroom was visited by a pet raccoon.

C. H. Shaffer, of the Game Commission, explains the value of multiflora rose for wildlife food and cover.



Virginia's Two Con-

In 1956, the Virginia Resource-Use Education Institute established, as a pilot program, a short course for the training of new teachers of the state.

This year, because of the enthusiasm shown by the first class, two additional short courses were held — one at V. P. I. again this summer and one at William and Mary.

By satisfactorily completing the course, the teachers receive credit toward the renewal of their teachers' certificates. Those who did not qualify

Highlights of the William and Mary workshop:

Most of the teachers attending were given scholarships to help defray their expenses here.

Albuvanna Conservation Club
Augusta Garden Club
Boxwood Garden Club
E. I. duPont deNemours, Inc.
Fauquier Fish and Game Association
Gabriella Garden Club
Garden Club of Alexandria
Garden Club of Danville
Garden Club of Norfolk
Garden Club of Virginia, state chapter
P. L. Gwaltney, Jr. & Co., Inc.
Holston River Soil Conservation District
Home Beneficial Life Insurance Co.
Izaak Walton League of America, Lynchburg chapter
James River Soil Conservation District
James E. Williams

A visit to the largemouth bass hatchery, Stevensville, Virginia, gave the teachers an idea of the time and money involved in fish production.





Dr. M. A. Byrd, of the biology department, explains features of his interesting work with various species of mosquitoes.



A very interesting phase of geology involved the origin, physical makeup identification of various rocks and minerals.

ervation Workshops

council in cooperation with the Virginia Polytechnic Institute in Virginia's natural resources for the public school

pleted questionnaires by last year's participants, two and a new one started at the College of William and

s at V. P. I. received 4½ quarter-hour credits toward

liam and Mary were credited with 3 semester hours.

re shown on these pages.

ips by various private and civic organizations listed

Johns-Manville Products Corporation
Edgar Lafferty
Lonesome Pine Soil Conservation District
Lynchburg Foundry Company
Nansemond River Garden Club of Suffolk
Natural Tunnel Soil Conservation District
Northern Neck Soil Conservation District
Old Dominion Foundation
Phipps & Bird, Inc.
Skyline Soil Conservation District
Southampton Garden Club
Southside Soil Conservation District Board
Southern States Cooperative
Thomas Jefferson Soil Conservation District
Virginia Association of Soil Conservation Districts
Virginia-Carolina Chemical Corporation
Virginia Electric & Power Company

Robert Bailey, fisheries biologist at Gloucester Point Laboratory, explains the work being done on the oyster drill in Virginia waters.



Forestry field trips included a visit to a local sawmill (top photo) and a guided tour of the Chesapeake Corporation plant at West Point (bottom photo).

These teachers now have the responsibility of teaching the importance of conservation to their students and thereby to make a better Virginia in the future.



AMERICA'S PASSING FRONTIER



Rugged, remote Alaska is fast becoming America's passing frontier land. Here's one Virginian's impression of the fabulous territory

By J. J. SHOMON*

(Photos by the author, U. S. Fish and Wildlife Service and U. S. Forest Service)

THE TERRITORY OF ALASKA is so remarkable that few superlatives can be found which will adequately describe it. While it is true that here is a land prodigal of its beauty, with more ice and snow, more scenic grandeur, more spectacular ocean passages, more wildlife than perhaps any other region in North America, it is likewise true that here is a land that may well mark the passing of one of the great natural outdoor frontiers of the world.

Once Alaska was big, remote, forbidding. Once it was vast and untrodden. Once it was another land. Not so today. Today's Alaska is different. Modern communication, fast transportation, a rapidly expanding population and economy is changing the territory into a new land—a land that may soon see a change in its whole future as it assumes advantages, or disadvantages, of the 49th or 50th sovereign state of the United States.

There are some who say that the change is good. Others who say it is bad. There are those who say Alaska needs "development," that only a modern Alaska can give to the people of the United States the full potential that it holds. Others decry development, say it will ruin Alaska, claim it will destroy the last great scenic wonderland in North America. Others just don't know or care. What

difference does it make, anyway, what happens to Alaska, is the usual refrain.

To the conservationist visiting Alaska, the whole situation seems perplexing, disturbing. Such it was for me when, after a lifelong dream, I availed myself of an opportunity to sojourn awhile in so-called untamed Alaska.

In the beginning, there were lots of discouragements. Warnings came aplenty. "Don't go. You'll be disappointed," some said. A friend cautioned me about the fantastic prices. Another wrote me that a short trip to Alaska was worthless, that the weather was wretched and that I'd find myself grounded 90 percent of the time. Only one man helped bolster my courage. He was Dow V. Baxter of Michigan, an old friend, and a man of considerable repute on Alaska and Iceland. Dow, for years a professor of forest pathology at the University of Michigan, spent 16 summers in Alaska and was planning his seventeenth trip. I knew I could bank on his advice.

For months on end this past year, Dow and I could be found eating our meals together at the University of Michigan Union and, always, we were discussing our favorite topic—Alaska. "Now when you go to Alaska," Dow would say, "go prepared for the very worst weather. Yes, indeed! Alaska has lots of weather. So just dress for it, go out in it and enjoy it. If you wait indoors for good weather in Alaska, by the time you get to where you're going, you will have lost it. So go, regardless, and you'll enjoy it."

*Mr. Shomon is chief of the education division of the Commission of Game and inland Fisheries and editor of *Virginia Wildlife* magazine. He returned to his desk in Richmond after a leave of absence of 10½ months working on his doctorate degree at the University of Michigan. During June and July, Mr. Shomon traveled extensively in North America, in conjunction with his doctorate research work, including a 33,000-mile tour of Alaska, Canada and the United States.

Dow's suggested itinerary and helpful advice was good but, lucky for me, when I reached Alaska the weatherman was unusually kind, and outside of a number of rainy days in southeastern Alaska all of my stay was in perfectly fine weather. However, before I get into the more personal phases of my trip, it may be well to give some cold facts on Alaska.

To begin, Alaska is a land of contrasts. One fifth the size of the United States and twice the size of Texas, it sprawls over 586,400 square miles of wild country with a shoreline equal to that of the United States, with temperatures ranging from hot to frigid cold and topography varying from vast mountains to large rolling uplands and coastal plains. The land dips from one extreme to another. Around Anchorage the elevation is just above sea level whereas, a few hundred miles north, in the Mt. McKinley area, the elevation surpasses 20,000 feet.

Temperature extremes are hard to believe. At Ft. Yukon, north of the Arctic Circle, where I spent a balmy summer day, the temperature goes as high as 100° F. and as low as —78° F.

Alaska is a region of no snakes; its moose are the largest of its kind with bulls weighing up to 1400 pounds and more; and the Alaskan brown bear, largest carnivorous animal in the world, is a sight to behold.

Alaska was discovered by Vitus Bering, a Dane in the service of Russia, on his voyage of 1741. The first permanent settlement was at Three Saints Bay, Kodiak Island, in 1784. Fort Archangel Michael, founded in 1799, was destroyed in 1802. In 1804 New Archangel was built and later became the Russian capitol, Sitka, under the direction of Alexander Baranof. The territory came into the possession of the United States in 1867 when Secretary Seward persuaded the United States to buy Alaska from Russia at the low sum of \$7,200,000 or about 2¢ per acre.

At the present time the territorial capitol is located in southeastern Alaska at Juneau. The country has a territorial legislature and a local government chiefly in its incorporated cities. It is represented in the United States

Congress by a delegate who has a seat but no vote in the House of Representatives. The Governor of Alaska is appointed by the President of the United States, while the single Congressional delegate is elected by the people.

Anchorage is Alaska's largest city, totaling in excess of 60,000, and has more airplanes per capita than any other city under the American flag. The visitor will be surprised to learn that, on the average, it is colder in Milwaukee and Duluth than in Anchorage in the winter; also, that flying conditions in Alaska are generally better than in most regions of western North America.

Fairbanks, a city of 6,000, often referred to as "The Heart of the Golden North," is just 120 miles south of the Arctic Circle. Its summer temperatures sometimes reach 90° F. and during the longest days of summer, when for several weeks the sun never sets, Fairbanks features a midnight-sun baseball game.

The people of Alaska are a mixture of whites and natives. Only about one fourth of the inhabitants are aborigines—Indians, Eskimos, and Aleuts, of whom the Eskimos are the most numerous. Contrary to popular belief, however, Eskimos are not identified with all parts of Alaska; they live mainly along the Bering Sea and the Arctic Ocean coasts. Perhaps less than a dozen white people today speak the Eskimo language. There is no written Eskimo language, and the first Eskimo dictionary is still to be published. Because of the long periods of sunlight in the summer or darkness in the winter in northern Alaska, the Eskimo judges time by his "sleeps."

The shortest distance separating North America from Asia occurs between Little and Big Diomede islands in the Bering Sea. On Little Diomede the picture of Abraham Lincoln adorns the schoolhouse while on Big Diomede, three miles away, the schoolhouse contains the portrait of Karl Marx. Geologists believe that at one time Asia and North America were connected by land at the Bering Straits and that most of the early inhabitants, including much of the animal life, came to America by way of this narrow strip of land.



Glaciers dating back a million years drape the famous mountain ranges of the Alaskan coast.



Boat and air dock at Juneau, the capital. Expanding air travel is opening up Alaska.



Skagway was once a famous Alaskan inland port during the gold rush days. Now it's pretty much a ghost town.



A totem park overlooks Ketchikan, the salmon capital of the world, in southeast Alaska.



Indian children beside a "cache" at Ft. Yukon, north of the Arctic Circle. Caches hold furs and foodstuffs for the natives.

As might be presumed, the most important natural resource in Alaska is fisheries, which has constituted almost a single economy for the country since the early days. The total value of fisheries production since 1867 has amounted to 2.5 billion dollars. Canned salmon is the leading fisheries product and accounts for roughly 85 percent of the United States' stock. Five recognized commercial varieties of salmon are regularly caught in Alaskan waters—king, sockeye, coho, pink or humpback, and chum. The steelhead trout is also classed as a salmon although it is a game fish and cannot be sold. Halibut is also a popular fishery with recent landings totaling around 25 million pounds annually.

The mining industry is second in Alaska in scope and value. In recent years mining shipments have amounted to 17 million dollars a year. Fur products come next in value, amounting to something like 323,905 skins valued at about \$6,525,000. Of this total, 60,204 were fur seals from the Pribilofs, valued at approximately \$5,067,526. The lumber industry has expanded considerably in recent years and the pulp and paper industry has entered the industrial picture by setting up its first year-round big pulp mill at Ketchikan.

Alaska's spectacular scenery makes it one of the world's finest vacation lands. It can be reached easily today by commercial airline, boat and automobile.

Since my time in Alaska was limited, I chose to travel chiefly by air. First stop out of Seattle was Ketchikan. The fully laden Pan-American stratoclipper made the landing at Annette Island after a 3½-hour flight from Seattle and disgorged a mass of commercial fishermen, all bound for the salmon run around Ketchikan.

From Annette you must shuttle by air to Ketchikan. You board a small, two-motored float plane, called the "Flying Goose," and fly the 22 miles to Ketchikan over picturesque islands. You land on the water and taxi to the dock at Ketchikan, getting a ground view of a small, quaint fishing city huddled next to towering forested mountains.

The scenery north and south of Ketchikan is picturesque. Some 25 miles of black-top roads lead north and south of the city and allow you to see some lovely country. There are interesting totem parks both north and south of the city, and one may well spend a week seeing other sights.

The flight from Ketchikan to Juneau, the capitol, is over scenic mountains and ocean passages, over picturesque Wrangell and Petersburg, through an area known as the Alexander Archipelago. The Juneau airport is nestled in the mountains. The first spectacular sight which meets the eye is Mendenhall Glacier, some seven miles away, a must for every visitor. Like Ketchikan, Juneau is also a small place and basks right in the shadows of towering coast ranges.

My only fishing jaunt in Alaska was in the Juneau area about 22 miles north of the city in a region called Tee Harbor, northeast of Admiralty Island. My guide, Roy Conners, and I were after king salmon and, like fishing in most places, it was lots of fishing at first and little catching. We fished with strips of fresh herring and went

down 17 arm-lengths. Sometimes we trolled. Finally, after a couple of hours of periodic drifting and trolling, I picked up a small coho of about four pounds. The rest of the day produced little, but the scenery and the wallowing big whales all around us provided no dull moments. Toward evening we tried several new spots and finally snagged into two kings, weighing 7 and 14 pounds respectively. Though not large as king salmon go, they tore around plenty and gave us a few anxious moments.

The air trip from Juneau to Anchorage is breath taking as you pass alongside the cloud-piercing Alaskan coast ranges, including Mt. Logan, second highest peak in North America. Our in-between stop at Cordova, a fishing village surrounded by glaciers, proved more than just a milk stop. Motor trouble delayed us four hours, forcing us to take other aircraft to Anchorage.

The country around booming, modern Anchorage is in sharp contrast to southeastern Alaska. Here plains and mountains merge in a striking manner to make the region, and the Kenai Peninsula area to the south, one of the loveliest sections in North America. The Kenai is a majestic country with magnificent forests and a mountain background of active volcanoes and stupendous glaciers. It is paradise country for the angler. Here is to be found some of the world's finest freshwater sport fishing—giant Alaskan rainbow, Arctic grayling, mackinaw and lake trout, fighting salmon. Brooks River, in particular, is the fly fisherman's paradise. Katmai National Monument is located on the Alaskan Peninsula some 250 miles from Anchorage and the Bristol Bay fishing area. This is the largest national monument under the American flag, containing 2,697,590 acres in sight of the greatest volcanic action on earth. Within the area is the stump of Mount Katmai, which blew its top in 1912. Here, too, are some 100 miles of beautiful ocean bays and fjords, many of which are backed by glacier-covered peaks, active volcanoes and crater lakes and forests. The great blue waters of the lakes and rivers teem with fish, and during the migratory run the great Alaskan brown bears can often be seen fishing for salmon.

The country between Anchorage and Fairbanks can best be seen by auto or train and many are the visitors that avail themselves of this opportunity. The train leaves Anchorage daily at 8:00 a.m. and arrives 12 hours later in historic Fairbanks. For those wishing to see moose and something of the typical central Alaskan countryside, including the Mt. McKinley area of the Alaska range, it is highly recommended. For those prone to photography, either stills or movies, it is a must. Meals are served on the train and I can say that they were good although the prices are typically Alaskan, which is high.

Fairbanks, of course, is a historic place and the terminus of the Alaska highway. It is crowded with tourists, transients, truck drivers, and military, and prices are sky high. Coffee is a quarter a cup. Sandwiches begin at six bits. Those who wish to see more of the North Country can fly to Nome, Kotzebue, Point Barrow, or Fort Yukon, by the Wien Airlines, and the one to three-day air tours are quite reasonable.

(Continued on page 23)



A pair of king salmon taken by the author near Tee Harbor, Alaska.



The Alaskan moose is the largest hooved mammal in North America. Controlled management keeps herds in balance with the food supply.



Musk oxen on Nuvivak Island. The introduced herd is on the increase.



Game Commission Photos by Kesteloo

Modern farming in Virginia has drastically changed the wildlife habitat. With an increase in livestock production, proper food and cover for quail are gradually shrinking.

Bobwhite faces a distressing future. Studies show how a steadily decreasing habitat is adding to the plight of Virginia's number one game bird.

QUAIL AND LIVESTOCK*

By J. H. REEVES, T. H. RIPLEY, HENRY S. MOSBY
Virginia Cooperative Wildlife Research Unit

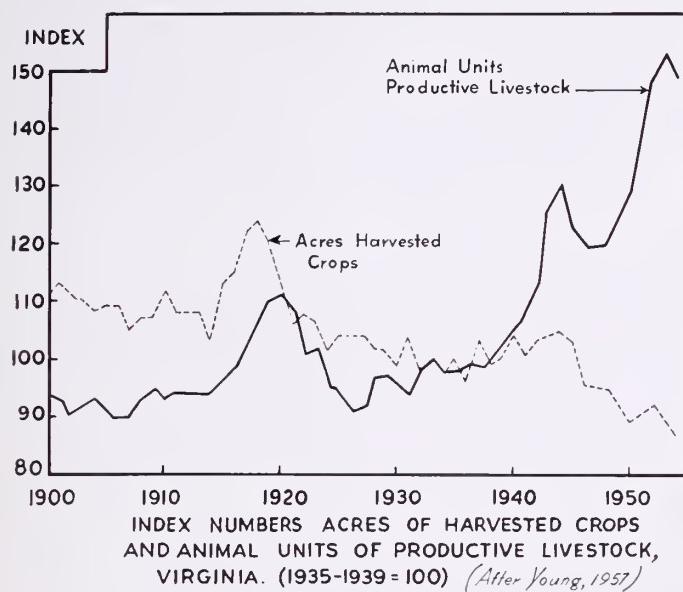
THROUGHOUT Virginia, particularly in the Valley and the Southwest, there have been rapid changes from grain and harvested crop production to grassland farming. Where livestock production has increased, many quail hunters are asking: "What's happened to the quail?" Perhaps they've not stopped to consider the effects of the increased acreage devoted to pasture and forage crop production although most hunters are aware that quail are not found in the middle of a pasture! It is an established fact among game biologists, and is well known among experienced sportsmen, that quail and livestock cannot be produced in great quantity on the same land.

Changes in agriculture often occur so gradually that we are not aware they are taking place. We have to look back over a period of years to appreciate these changes. About the turn of the century Virginia farmers tilled their land primarily to supply food for their families, or to keep up a milk cow or a team or two of work horses. Today, some fifty years later, a large portion of farm products consists of livestock and cash crops produced for the market. With the universal use of power equipment, the size of the fields was increased to make more efficient use of farm machinery. Labor costs have soared. Today it is much cheaper to buy wire fencing than to split rails. Years ago farm crops were harvested. Today the farm enterprise is directed toward the production of livestock, which consumes much of its food directly from the pastures. All of these changes in farming practices have had

*Release No. 59-2 of the Virginia Cooperative Wildlife Research Unit, Virginia Polytechnic Institute, Virginia Commission of Game and Inland Fisheries, Wildlife Management Institute and Fish and Wildlife Service, cooperating.

a very real influence on our wildlife.

Dr. Young, director of the Virginia Agricultural Experiment Station, recently summarized the changes which have taken place in Virginia agriculture in the last half-century. He pointed out that in 1954 farmers owned 77 percent more dairy cattle than they did in 1900, that livestock production was 156 percent greater in 1950-54 than it was in 1900-09. During this fifty-year period there was a decline in the number of acres used to produce harvested crops such as corn and wheat—a type of land use that is very beneficial to quail, as all hunters know. In the last fifty years, Virginia farming methods have changed from small field, harvested crop agriculture to larger field, more intensively cultivated farming with emphasis on livestock production.



Studies which have been underway on the approximately 2,300-acre V. P. I. College Farms for the past twenty years give some indication as to the influence of these agricultural changes upon a quail population. During the last ten years (1947-1956) rather complete records have been maintained on the changes which have taken place in the quail population each year during the ten-year period. In the 1930's, this area had quite a reputation as a quail field trial area and in the 1940's was also used by several beagle field trial clubs. However, beginning in 1950, far-reaching changes began to take place. It became necessary to utilize the available land to the greatest possible degree for research and demonstrational purposes. Semi-abandoned pasture land was cleaned up and improved; small waste areas were cut out and placed in crop production or pasture; an abandoned orchard was made into a golf course; a woodlot was cleared of all shrubby growth and planted to pasture beneath over-mature oak trees; two garden sites were made into a baseball field; a large marshy area was filled and transformed into a parking lot; other marshy areas were fenced and pastured; both dairy and beef cattle production was increased. Of course, these changes in land use had imme-



Commission Photo by Shomion
During the fall and winter months quail depend almost entirely on grain and weed seeds left after harvest. Pastures provide very little food for this game bird.

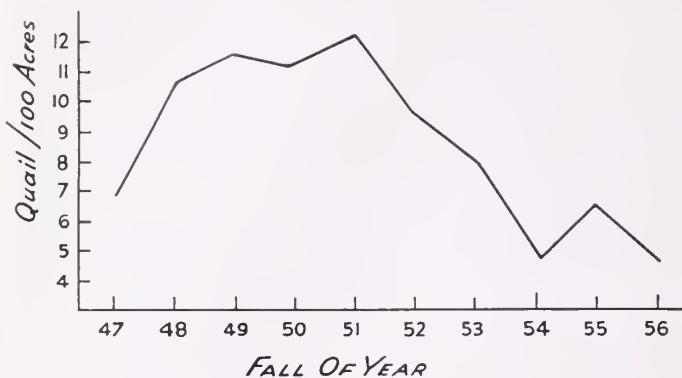


V. B. Sheffler—Fish and Wildlife Service
This view of a typical livestock farm is a good example of a quail desert. Existence here would be difficult for most wildlife species.



Photo by H. S. Mosby
One of the modern trends of farming is the clearing of fence rows. Fences such as this one offer no protection or food.

diate effects upon the approximately twenty coveys of quail present on this area as well as the rabbits, woodcock, dove and other game species. For example, in 1950 there were approximately 12 quail per 100 acres on the College Farms. By 1956 quail had decreased to about four quail per 100 acres.



Changes similar to these appear to be rather widespread throughout Virginia. Other states undergoing this

change from harvested crop to livestock production also report a decline in quail. The eviction of the quail from much of its former habitat on the average farm can be summarized by stating that as livestock production and "clean" farming increase, there will be a reduction in the amount of fencerow and crop land available for quail. As the land takes on the "modern" look of cow habitat with its wire fences, closely grazed pastures and almost complete absence of ground cover, the quail will decrease in abundance.

What can be done about it? Not much. However, an intelligent farm-game habitat improvement program will help retard this downward trend. Bobwhites will increase only when habitat improvement can be done without interfering with the farmer's business of securing a livelihood from the land he tills. It cannot be anticipated that rail fences and two-acre fields will make a comeback even though they were the quail's greatest boon. However, there can be a place for quail on every farm if they are given a helping hand in the form of necessary food and cover.

HARMONY OR DISCORD (Continued from page 10)

on land that might otherwise produce only corn.

Current conceptions of good land use, in addition to including such aspects as sustained yield and the greatest good for the greatest number, carry with them the connotation of a high degree of ethical concern for the needs of man in the future, and assume that benefits to man are spiritual and social as well as economic. Wildlife is largely a recreational resource utilized for the enrichment and restoration of mind and body. Although economics enters as a by-product, it would be difficult to argue that economics is the only or even the main reason for management. Nevertheless, money is a major consideration in a multiple-use program. That a purely economic approach is untenable is now being demonstrated in many areas where government agencies responsible for resources management are being forced into what some people believe to be economically unsound programs. There are increasing numbers of cases where social and aesthetic conditions outweigh monetary considerations. Responsible agencies are being forced to adopt programs simply because a large number of people want them. On these areas best use for the greatest number of people has become recreational use.

Wildlife management is still and always will be a specialty, but to succeed it must take a broad view of its own objectives and recognize social, economic, and biological factors in its own and related fields. A view limited to the ecology of game and fur species is too narrow to lead to successful management. Big-game management divorced from forest economics is not realistic. Constant emphasis on more waterfowl without consideration of crop damage is unreasonable. Concentration of management effort on game and fur when thousands are beginning to visit parks and to use the outdoors generally, simply to see the living world, is

short sighted.

What will be the demand for wildlife in ten, twenty years from now? Will we still be thinking mainly of hunters or will other uses of wildlife be developed to a higher degree and by more people than at present? Certainly this is the trend. Will we still be pointing with pride to a few thousand yards of multiflora hedge or a few acres of deer browse regenerating in the path of a bulldozer while other men punch holes in mountains to drain rivers of their kilowatts, erect skyscraping, low-cost apartment houses, or make the Great Lakes accessible to ocean liners?

It is a healthy program that knows where it is going, and why. In the wildlife field, the "why" of our going is more evident than the "where." We exist to guide the people, our services not necessarily being confined to the wishes of vociferous minorities. Our goal, our "where," is perhaps using our knowledge, biological and otherwise, to provide wildlife where it is wanted, and in desired abundance, within the limits imposed by other uses of the land. If there were no wildlife management, there would still be wildlife, and it would also be used. The measure of our success, therefore, is the degree to which our efforts narrow the gap between what people now and in the future would get without us, and what they want and need.

Our biological and ecological knowledge of wildlife is not enough to achieve this goal. The land is complex and its uses interrelated. Like notes in music, the skills for using land can come together in harmony or discord. Harmony demands cooperation, coordination, and a knowledge of more than one key.

* Parks and Recreation Division, B. C. Forest Service, Victoria, British Columbia; and Division of Research, Department of Lands and Forests, Maple, Ontario. Taken from *Journal of Wildlife Management*, Vol. 21, No. 3, July 1957.

Space does not allow me to describe my side trips, such as the one to Ft. Yukon, White Horse, Yukon Territory and to Skagway, Alaska, except to say that they are worth seeing.

South of Fairbanks can be seen extensive flatlands, lakes and muskegs, which are largely inaccessible except by plane or dog team. Here, on a special big-game survey with the U. S. Fish and Wildlife Service, I tallied a total of 55 moose in one hour. Our flight then took us into the higher mountain country of the Alaska range and there we counted 12 Dall sheep, one grizzly, and 60 caribou. Jim King was pilot of our two-seater Super-Cub and I shall never forget that flight into what can easily be called "God's Country."

When we got back to the airport at Fairbanks, Jim asked me how I enjoyed the trip. I was half sick, pale and perceptibly unsteady after 3½ hours of aerial acrobatics in the big-game country and shook my head. Finally, however, I countered. "It was just super. Seeing all those moose and the other big game, plus that frightening panorama of the rugged Alaska range . . . with all the snow and ice—well, I feel initiated. Now I safely feel that I have seen something of real Alaska."

But we mustn't kid ourselves. Alaska can't be seen in several weeks, nor several months. It is big country and although the earth has shrunk substantially in recent years and will continue to shrink still more, the most valuable feature of Alaska is still bigness.

With bigness comes big problems and here Alaska has more than its full share. Though the U. S. Forest Service and the U. S. Fish and Wildlife Service appear to be do-

ing a commendable job in the region, the problems they face are big and difficult to handle. Fires still burn over vast areas each summer, the salmon fishery is still severely exploited, and many forms of big game have been alarmingly reduced. Conservation there, as in many of our states, is still a long way from reality.

If Alaska is to be safeguarded for all time, it occurs to some observers that what must be established first is a strong, long-range conservation policy toward the management of natural resources so as to achieve *the greatest good, for the largest number, for the longest time*. Though some safeguards have been established, they are not enough. Much more must be done.

To me, Alaska's greatest potential lies in her natural endowments—the richness of her scenery, the wildness of her country, her beauty, her fish and game and other wildlife. These possess values far greater than anything which could be achieved through commercial development, and will profit Alaska and Americans more in the long run. The good Lord is not creating any more new land and it is time we started thinking, and acting, seriously about the remaining lands we have. Alaska's natural resources appear to have their highest potential in esthetic and spiritual values. In this twentieth-century atomic era, when intelligent thinking and clear perspective are so sorely wanted, we need to fall back on something more than material resources. As the world shrinks and life gets more and more complex, it is the intangibles that will assume ever-increasing meaning. Only proper planning now and proper conservation measures can assure man the necessary healthy environment in which to live.

Water Safety

In retrospect, the season for drownings was the most critical in our nation's history. Although the recreational drowning problem is naturally going to be in the summer months, it has periodical peaks which deserve special attention. These center around the waterfowl shooting months in the fall and winter, and in early spring when trying out a new boat. The situation is worthy of consideration, especially when these drownings are caused by carelessness.

The Water Safety Congress, which grew from a region-wide organization, has now a national scope. As new water areas are being developed all over the country, the need for safety caution is extreme. The ratio of drownings to traffic accidents is far higher this year than ever before.

The U. S. Coast Guard has recently supplied each member of the Water Safety Congress with the booklet *Motorboat Safety*. The publication is a good compilation of all phases of water activities and also includes instructions on artificial respiration.

Water safety education by the Water Safety Congress is a public service project. Each individual should voluntarily give his time to relay its life-or-death message.

Representatives of governmental agencies, groups such

as the American Red Cross, boating and rescue organizations, sporting goods dealers, dock operators, and public-spirited individuals contribute money, time and effort toward work of the Water Safety Congress designed to combat problems of water safety.

From a report made by the Outboard Boating Club, the following were the causes of fatal boating accidents in 1956: collision with another boat, rocks, reef or submerged object; swamped by wave, wave of another boat, own wash while in reverse, windstorm or rain squall; fire or explosion; faulty or mismatched equipment; operator negligence, overloading, standing, unbalanced load, too sharp turn, reckless operation, fell overboard and drowned, fell from and run over by boat, thrown by boat; capsized or overturned.

The simple conclusion to these causes is carelessness. The slogan for the Water Safety Congress is "Be water-wise—save lives."

In Virginia where the state is bathed by some 1500 miles of salt water and where over 100,000 acres of fresh water, rivers, ponds and lakes are attracting more and more recreationists each year, it is essential that all persons who go near or onto water be safety conscious. Do your part and help cut down water accidents.



Annual Fishing Rodeo at Harrisonburg Successful

The Izaak Walton League of Harrisonburg and the United Commercial



This group of proud children display the prizes won in the eighth annual fishing rodeo. Prizes consisted of rods, reels, lines, knives and electric lanterns.

Travelers jointly sponsored the eighth Annual Fishing Rodeo at J. E. Summers' pond in Rockingham County.

Two hundred twenty-five girls and boys and many adults participated in the contest. After the prizes were presented, almost a thousand hot dogs were eaten and several hundred bottles of milk and coke consumed, showing that competition was still keen.

Fishing and Hunting Lead Popularity Poll

While nearly four million golfers will crowd more than 5000 courses in the U. S. this year, an estimated 32 million sportsmen will fish and hunt from coast to coast and from Canada to the Gulf of Mexico. Anglers and hunters now outnumber golfers nine to one.

From a poll of the fish and game departments in the United States, the American Express Travel Survey and Forecast reveals that fishing and hunting are number one and two on the nation's sports parade. Fifteen percent of these enthusiasts are women. Of twenty million fishermen, more than 4½ million are women, and of 12 million hunters, there are one-half

million nimrods from the distaff side.

Most state fish and game departments queried by American Express estimated that fishermen and hunters together spend three billion dollars on lodging, equipment, boat rentals and guides. The sportsmen will dole out \$85 million for license fees: \$38 million for fishing and about \$47 million for hunting licenses. A non-resident hunting and fishing license runs as high as \$100 in big-game areas.

Many seek the unique in hunting and fishing and penetrate into areas such as Lake Okeechobee in the Florida Everglades where it is necessary to charter expensive means of transportation to pursue the waterfowl, game and fish. They travel by swamp buggies, weasels, airboats and half-tracks in the sawgrass and watery wilderness. In the Maine district, plane service and canoes are necessary to reach the game and fish of that habitat. There are float fishing trips in the Missouri and Arkansas Ozarks and also down other major streams in Mississippi and Michigan. The expenditures for a day of such fishing as this may run from twenty dollars up.

Camp Pickett Hunting Allowed

Webb Midyette, chief of the law enforcement division of the Game Commission, disclosed that Colonel Frederick K. Hearn, Commanding Officer of Camp Pickett Military Reservation, has given permission for hunting of deer with bow and arrow on the reservation this year with hunters being subject to Post Regulations and Virginia State Laws. The season will open October 15 and close November 1, both dates inclusive.

People Enjoy Wildlife Refuges Too

From the *Science News Letter*, an interesting statistic for 1956 is the

record-breaking number of people who visited wildlife refuges last year. Seven million five-hundred thousand persons took advantage of the public facilities in 270 refuges in the United States. They went to hunt, swim, fish, go boating and picnicking, and in many cases they went to study nature. Evidently the publicity has increased throughout the nation as attendance on most of the refuges doubled over the 1955 records.

I. W. L. A. Sponsors Red Cap Month

An announcement has been made by Frank Gregg, newly appointed executive director of the Izaak Walton League of America, Inc., that the month of September will be publicized throughout the country as Red Cap Month. A nationwide action program sponsored by the Izaak Walton League of America will feature the red cap as a symbol for hunting safety and conservation. The aims of the Red Cap program are to: encourage respect for legal and moral hunting laws; help foster safety in the use of firearms; promote respect for the rights of property owners by hunters; prevent range and forest fires; and to help perpetuate hunting as a national sport for ourselves and future generations.



Tippy, an Eskimo spitz owned by Mr. and Mrs. Allen Taylor, enjoys surfing as much as his owners like fishing and boating. This shot was made on Kerr Reservoir during the past summer.

Use of Electronic Calls Banned in Taking Migratory Game Birds

The use of electrical devices or recordings in taking migratory game birds will be prohibited during the 1957-58 hunting season, according to an amendment to the migratory waterfowl hunting regulations announced recently by the Department of the Interior.

The amended section, 6.3(b) (7), of the regulations under the Migratory Bird Treaty Act is broad enough to apply to all migratory game birds and will prohibit the use of recordings and amplifications of imitations of goose or duck calls produced by conventional calling devices.

The standard penalties for the illegal taking of migratory game birds will now apply to the taking of such birds "by the use or aid of recorded bird calls or sounds or recorded or amplified imitations of bird calls or sounds." These penalties are a maximum of six months in jail, a maximum fine of \$500, or both.

National Wildlife Federation Sets Up Fund

The Board of Directors of the National Wildlife Federation has set up a special fund of \$20,000 for a two-year educational program. The appropriation is to be expanded to promote the use of the Soil Bank and Small Watersheds programs and to curtail wetlands drainage, where it is detrimental to the long-range economy of an area through the lowering of the water tables.

Executive Director Ernest Swift of the Federation said that before initiation of the new project, he will seek the suggestions of state wildlife agencies and other conservation groups.

This marks the second year that the Federation has supported the program, but vigorous resumption is necessary, according to Federation leaders, as the continued destruction of valuable resources through the unwise drainage of natural marshlands threatens water shortages.

A tentative budget for 1958 has been approved by the Board to continue aid for graduate fellowships, assistance in teachers' workshops and other activities designed to encourage

the teaching of conservation principles in the nation's schools.

Young Whoopers Growing

The two offspring of Josephine and Crip, whooping cranes in Audubon Park, New Orleans, are now about seven months old, stand approximately thirty inches high—almost adult size—and apparently are in good health. So far the young birds, which increased the world's whooping crane census to 30, are unnamed.

George Douglas, superintendent of Audubon Park, has been besieged with telephone, telegram and letter inquiries from all over the world concerning these rare birds. The other known whoopers live at the Aransas wildlife refuge in Texas where some 15,000 visitors have observed them from the vantage point of a new observation tower.



"Where's daddy's ball and chain? He wants to ask it if he can go fishing."

Dinosaur Monument as National Park

The 325-square-mile reserve in Colorado known as the Dinosaur National Monument may soon be the 30th national park. Senator Gordon Allott, of Colorado, has made this proposal to Congress to replace the defeated project last year, which was to put the Echo Park Dam on the same site. But because of the uprising of conservationists, the Echo Dam bill foundered. However, both groups are now working together on the new bill, as well as several conservation agencies and the executive side of the government, who favor the establishment of this park. In spite of the assured support, the Council of Conservationists warns of some opposition to be ex-

pected and asks that each individual contribute the needed endorsement to Congress.

Bow Hunters Have Early Deer Season

Bow and arrow hunters will not only have an earlier but also a longer deer season this year, according to Mrs. Evelyn P. Rueger, assistant executive director of the Commission of Game and Inland Fisheries. The amended Commission regulation reads as follows: "It shall be lawful to hunt deer of either sex with bow and arrow from October 15 to November 1, both dates inclusive, except where there is a closed general hunting season on deer."

The opening date is 15 days earlier than the regulation permitted last year, and there is an increase of six hunting days for the bow enthusiasts.

Also stated in the regulation is the provision that it shall be unlawful to use a crossbow or poison arrows for the purpose of hunting wild birds and wild animals.

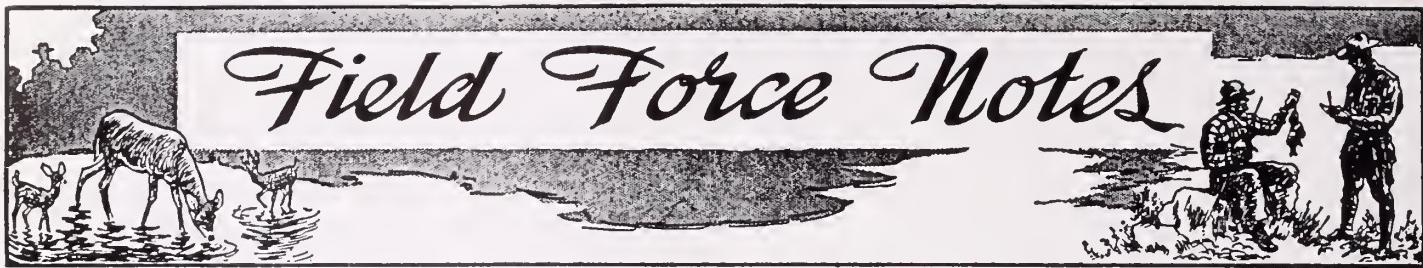
Is It a Hawk?

A nighthawk is not a hawk, and in fact does not even belong to the hawk clan. It belongs to a family of predominantly night-flying birds known to birdwatchers as goatsuckers.

According to legend, the term goatsuckers comes from a superstition of Old World peasants who, when hearing the calls of the night-fliers believed that they lived by sucking milk from their goats.

Actually, the nighthawk's food consists of insects from the largest moths to dragonflies, mosquitoes and flying ants. More than 1000 insects, including 50 different species have been taken from a single nighthawk. The nighthawk takes all of its food in flight, and hence is highly specialized physically for catching flying insects.

The bird's head is broad and flattened; the horny part of its bill is very small; its open mouth extends back below its eye and inside the mouth is a great development of long bristles that keep captured insects from escaping. Physical characteristics of a whip-poor-will and a nighthawk are so similar that it is very difficult to distinguish between the two species.



Dutch Clergyman Visits Commission

Rev. Pierre Heynen of Margraten, Holland, was a recent visitor to the Richmond offices of the Commission



Rev. Pierre Heynen exchanges greetings with Mrs. Evelyn P. Rueger, assistant executive director of the Commission, after an introduction by J. J. Shomon. Rev. Heynen highly complimented *Virginia Wildlife*.

of Game and Inland Fisheries following a six weeks' visit in the United States calling on old friends and families who lost loved ones in Holland during World War II. One of the unsung heroes of the Battle of Holland, Father Heynen ministered to some 21,000 war dead at Margraten U. S. Military Cemetery, established in Holland by the 611th Q. M. Graves Registration Company commanded by J. J. Shomon, presently with the Game Commission. Father Heynen and Shomon made a long-lasting friendship in Holland during the war and, with the village burgemeister, J. E. E. Ronkers, originated the idea of grave adoption by the Dutch people.

Father Heynen paid the Commission high compliments on his visit here and said that he and his students at the College of Rolduc, in Kerkrade, where he is teaching, are also spreading the doctrine of natural resources conservation. Wildlife clubs are being formed and the entire countryside is being made conservation conscious. "*Virginia Wildlife*" is being read in our area and is having great influence," the Dutch priest said.

Egyptian Fisheries Scientist Here

Also visiting the Richmond offices of the Commission recently was a fisheries biologist from Alexandria, Egypt. He was Salah El-Zarka of the Alexandria Institute of Hydrobiology, Kayet Bay, Alexandria. Dr. El-Zarka recently completed his doctoral studies in fisheries at the University of Michigan, working on the yellow perch in Saginaw Bay, Lake Huron. Before returning to his native Egypt, he visited many game and fish departments in the United States. After visiting the Richmond offices of the Commission, where he spent considerable time with the fish division, Dr. El-Zarka proceeded to Gloucester Point, Virginia Fisheries Laboratory.

"We have little sport fishing in Egypt," Dr. El-Zarka said. "Most of our work is with food fishes in the Mediterranean area and the several large inland lakes. Someday I will write you an article on the fisheries conditions in Egypt," he declared.

I. T. Quinn III Arrives at 7 Lbs. 1 Oz.

The Game Commission is proud to announce the arrival of I. T. Quinn III the first grandchild of I. T. Quinn, executive director of the Commission.

The youngest Quinn weighing in at seven pounds and one ounce was born on August 16 at 5:45 a.m. in Arkadelphia, Arkansas. At the time both grandparents were visiting their son and from a statement made by the eldest Quinn it seems that the event pleased him, quote: "I'm a full-fledged grandpa today. He's a blond!"

Game Warden's Work Diversified

Roy Walker, game warden for Albemarle County, was called upon to track vandals who had knocked down

fifteen tombstones in a cemetery just outside Charlottesville. Walker released bloodhounds after the scent, but they lost the track about a half mile from the cemetery. It was the third time vandalism had occurred at River-view Cemetery.

Deformed Yearling Doe Killed by Dogs

A sixty-pound yearling doe, pursued by dogs in Albemarle County, became entangled in a honeysuckle hedge where she was rescued by the county game warden, Grayson Johnson, who took her to the nearby S.P.C.A. shelter.

She was in fair condition but died later. Most probably a hampering impediment for the unfortunate animal was her deformed feet as shown in the accompanying photograph. Howard Sheldon, game biologist from Culpeper, had the feet preserved and observed that the doe might have injured herself or the deformity could have been a congenital development. Records show that only two cases of a rare disease of the black-tailed deer



These deer feet show an unusual condition caused by enlarging of the laminae, a thin, vascular tissue which covers part of the hoof. This disease is rather rare in the white-tailed deer.

known as enlarging of the hoof (*Laminitis*) have been reported. The description of these hoofs match those in the photograph.

Wildlife Questions and Answers

Ques.: Does the mole spend the entire year in the shallow tunnels so often seen in our yards?

Ans.: No, it does not. Moles dig two types of tunnels. The tunnel which is so common to most people is known as the surface tunnel and is used during warm weather chiefly as a means for finding food. A deeper tunnel, from six inches to one foot below the surface is used during the cold months and during extremely dry weather.

Ques.: What are the main foods of the mourning dove?

Ans.: Food habits studies reveal that the bulk of the mourning dove's diet is comprised of seeds. Corn, wheat and other common grain crops account for 98% of this bird's food.

Ques.: What is an owl pellet?

Ans.: The owl is a predaceous type bird, feeding primarily on mice and other small mammals. After these animals are eaten the bones and hair are regurgitated in the form of a small pellet. The ground beneath an owl's nest is usually littered with these pellets.

Ques.: A neighbor of mine advised me to clip the long hair of my collie last summer. After the clipping process, the dog did not seem to be any cooler. Another friend advised that a long-haired dog should not be clipped in hot weather. Who is right?

Ans.: Poor Fido has no say in this argument, but if he could voice his opinion he would definitely say no. A dog, unlike a human, perspires through his mouth. When the hair is clipped, his skin is exposed to the direct rays of the sun and, therefore, his body temperature is raised. We perspire through our skin and evaporation causes us to feel cooler.

Ques.: Many of my boating friends tell me that marine borers cannot penetrate a film of plastic on the bottom of a boat. Is this true?

Ans.: Yes, it is true. Protection by this method, however, is dependent upon maintaining a continuous film of plastic on the boat bottom. Any small breaks in this protective film will allow the borer to enter. The material most commonly used is glass-reinforced polyester resin, commercially known as "fiber glass."

Ques.: Do wild geese raise their young in the North or in the South?

Ans.: Our wild geese and ducks migrate each year, going north during the summer months and south during the winter. The breeding grounds are largely in the northern latitude.

Ques.: What does the opossum eat?

Ans.: The opossum is an omnivorous animal, indicating that it will eat almost anything in the meat or vegetable line. This animal will eat insects, fruit, garbage, carrion, small mammals, birds and eggs in its varied diet.



"I suggest you give up squirrel hunting for a while."

Ques.: How long do young beavers remain with their parents in a beaver colony?

Ans.: Evidence obtained through the studies of beaver colonies indicate that yearling beaver are permitted to remain with the parents but two-year olds are turned out to fend for themselves.

Ques.: Among the birds, which sex does all or most of the singing?

Ans.: In most cases the male of the species is the one that does the singing. There are exceptions, however, and one notable example is our female cardinal, which is a common singer.

Ques.: Approximately how much food, particularly grain, will a common house rat destroy in a 12-months period?

Ans.: It has been estimated that a pair of rats will consume the equivalent of a 100-pound sack of grain in 12 months. If we multiply this by the millions of rats we have in the United States, it becomes obvious how much it costs us annually to feed these rodents.

Ques.: I have frequently read about "drip" in reference to frozen fish. What does this term mean?

Ans.: The next time you thaw frozen fish, look for a clear or slightly cloudy fluid. This fluid contains water with dissolved protein plus nitrogenous constituents and minerals. The amount of drip depends upon the species of fish and the length and temperature of storage prior to thawing. Drip may vary from less than one percent to more than twenty of the weight of the fish.

Ques.: I have often seen muskrats and beavers swimming under ice in lakes and small streams. How do they manage to breathe while under the ice?

Ans.: Quite often after a pond or stream freezes, the water level will drop as a result of draining and a small layer of air will be present under the ice or air bubbles are often present and these are utilized for breathing.

Ques.: I have always heard the expression "as the crow flies" in reference to distance. Does the crow tend to fly in a straight path as the expression usually indicates?

Ans.: No. Crows often fly in a zigzag pattern and may cover more air miles than a plane. Their flight plan isn't always in a straight line.

Ques.: Last summer we were bothered a great deal by poison ivy around our cottage. What method is now prescribed for eliminating this plant?

Ans.: Spray with 2-4-5-T (marketed under several commercial names) diluted with fuel oil or water. Fuel oil is more effective but tends to kill grass and trees; a watered solution may require two sprayings but will not burn trees and grass. Neither solution, once applied to vegetation, appears to have any serious effects on animals. Directions on the label should be followed when applying this spray.

Ques.: During a lawn party at my home in Richmond last summer, we were fascinated by a large cricket-like insect with prominent front legs, similar to those of a mole. Could you possibly tell me the name of this insect?

Ans.: The insect to which you refer is probably the mole cricket (*Gryllotalpa heradactyla*). This insect spends most of its life underground but may be attracted to the surface by lights during the mating season. These individuals feed primarily on roots, earthworms and larvae. They lay clusters of eggs in underground chambers.



Photo by Leonard Lee Rue III

One, H. S. Senior Grade, \$400 College Conservation Scholarship

SUBJECT: Our Wildlife Resource: its value and conservation.

SPONSORED BY: The Virginia Commission of Game and Inland Fisheries and the Virginia Division of the Izaak Walton League of America.

APPROVED BY: Virginia State Board of Education.

ENDORSED BY: Virginia Resource Use Education Council and Resource Use Committee, Virginia Academy of Science.

DATE: OCTOBER 1, 1957, to FEBRUARY 2, 1958.

PRIZES

One 12th grade, college scholarship	\$ 400
Eight grand prize awards, \$50 each, one for each grade, totaling	\$ 400
Eight second prizes, \$25 each, one for each grade, totaling	\$ 200
Eight third prizes, \$15 each, one for each grade, totalling	\$ 120
Sixteen honorable mention prizes, \$10 each, two for each grade, totaling	\$ 160
Sixteen special mention prizes, \$5 each, two for each grade, totaling	\$ 80
One school prize	\$ 40
Grand total	\$1,400

There will be seven prizes in each of the eight competing grades. Scholarship winner, grand prize winners and winning school representatives will come to Richmond as guests of the sponsors to receive their awards. Others will be given awards in the schools.

Two hundred certificates of merit also will be awarded in addition to the money grand prizes.

I 1th ANNUAL

WILDLIFE Essay Contest

\$1400⁰⁰

in PRIZES

CONTEST RULES

1. Students from all Virginia Schools, grades 5-12 inclusive, are eligible.
2. Essays must be submitted through the schools participating. Schools to be eligible must send in an official entry card provided for the purpose.
3. Each essay submitted must bear the following information in the upper right hand corner: name, sex, age, grade, address, school, county, teacher. All high school seniors should give the name of the college or university you would like to attend and the course of study you are most interested in following.
4. Grand prize awards (\$50 awards only) cannot be given to winners two years in succession. Also, Commission employees and their families are not eligible.
5. Scholarship award good only in Virginia colleges and universities unless course work is not offered. Award to go to top high school senior winner or next alternate
6. Award to school to be made on basis of quantity and quality of essays submitted.
7. Final judging will be done by a panel of three judges —one from each sponsoring organization and one from the State Board of Education. Teachers are urged to indicate their choice of best essays, but to send in *all* their essays.
8. All essays MUST be mailed first class prepaid, to the Commission of Game and Inland Fisheries, Box 1642, Richmond 13, Virginia. Essays must be mailed and postmarked not later than February 28, 1958.